

Focus. . . Alcohol- and Drug-Related Deaths: 1990-1998

Too many Missourians die prematurely due to their use of tobacco, alcohol, and other drugs. By far the largest cause of the three is tobacco, which contributes to an estimated one of five Missouri resident deaths, as explained in an earlier "Focus" article.¹ The current article will examine the deaths of Missouri residents due to their use of alcohol and other drugs.

Applying the National Center for Health Statistics' definition of alcohol-and drug-related deaths² to Missouri resident deaths for the years 1990-1998, about one percent (4,766) were attributed directly to alcohol and other drugs. That percentage has risen slightly over the years, from 0.92 percent in 1990 to 1.12 percent in 1998.

The bottom rows of Table 1 show that the number and rate of these deaths have also been increasing over recent years. Missouri's rate has generally been lower than the national rate,³ but the gap is narrowing. The recent increase raises questions regarding what population group or drug accounts for it. There is no one simple answer.

One factor is that the numbers of deaths in these years do not necessarily reflect usage during those years. Alcohol use accounts for far more deaths than does use of any other substance except tobacco. Because it is legal and does not require a prescription, it is used by a much larger number of people than most of the other potentially lethal drugs. But alcohol's contribution to the increase is relatively small, because most of the alcohol-related deaths, such as those attributed to cirrhosis and cardiomyopathy, are due to decades of drinking. Only a small minority of alcohol deaths come within hours, as when a person "chugs" a large quantity of alcohol in a short time.

Death certificates provide less information on the duration of use preceding the death for drugs other than alcohol. One exception is the 50 to 70 drug-related suicides per year, which presumably are related to acute overdoses.

Even though the rates of alcohol- and drug-related death at any age are only somewhat related to the ages at which people use the substances, there is a pronounced pattern by age group. The increase is sharpest among middle-aged Missourians as seen in Figure 1. Specifically, deaths in ages 35-44 and 45-54 contributed most to the increase in number of deaths and to the increase in rates. Rates for persons under age 35 and for persons over age 65 have remained relatively stable through the 1990's. For Missouri residents in their forties, however, there were marked increases in deaths due to cirrhosis, alcohol dependence, cocaine, heroin and other drugs.

The data were also examined by gender, but no trend was found. The ratio of males to females in total alcohol-and drug-related deaths fluctuated during the decade, with an average of 72.2 percent of the deaths being to males. Females accounted for a slightly smaller percent of the alcohol-related deaths than of the deaths due to other drugs.

Examining the data by race showed that most of the increase was among white Missourians. Deaths due both to alcohol and to other drugs rose for white residents during the period, while a slight rise in black deaths due to other drugs was largely balanced by a decrease in black deaths due to alcohol. This has resulted in a reduction in the ratio of black to white deaths from about 2.7 in the early 1990s to about 2.0 for the past three years.⁴

The most revealing way to analyze this data was by type of drug.⁵ Table 1 allows us to identify at least a few drugs which contributed to the increase shown there.

Comparing 1998 with 1990, the total increase was 145 deaths (31 percent). Twenty of those deaths were suicides, and two were assaults. While alcohol accounted for nearly two-thirds (63.1 percent) of the total alcohol- and drug-related deaths from 1990 through 1998, it contributed only 16 deaths to the increase, or 11.0 percent. Because most of the alcohol deaths are due to long-term use, alcohol death numbers do not fluctuate as dramatically as those due to other drugs can.

Most of the increase between 1990 and 1998 was in deaths due to other drugs. Cocaine and related drugs contributed 34 of the additional deaths, heroin and other opiates 30, and stimulants nine (up from zero). The "other" category includes unspecified "drug abuse" as well as the effects of combinations of drugs, a common and deadly pattern. There were sharp relative increases in those deaths, as well.

Heroin deaths increased for both black and white Missourians, and the increase appears to be indicative of current increasing use.⁶ Cocaine deaths rose for both races, but more sharply among African-American Missourians. All the deaths attributed to stimulants, however, were to white Missourians.

There was also a distinct geographic pattern. The county with the highest rate of both alcohol-and drug-related deaths was St. Louis City, with a rate of alcohol-related deaths nearly three times the state rate, and a drug death rate more than three times the state rate. However, St. Louis City contributed only three deaths to the increase between 1990 and 1998. Jackson County's rates were also somewhat high and are increasing; Jackson County contributed 44 deaths to the increase. St. Louis County, Jefferson County, and St. Charles County also contributed ten or more deaths each to the increase.

The deaths we have been discussing so far do not represent the entire toll of alcohol and other drugs. In addition to these deaths, which were directly caused by the decedent's use of the substance, there are two other ways that alcohol's contribution to a death can be recorded on death certificates. One is that alcohol is noted as a significant contributing condition in some deaths attributed to other causes. The other is that there is a checkbox for use with deaths due to injury or poisoning which indicates that the injury was "alcohol-related." In some of these deaths, the decedent did not drink, as in the case of a victim of drunk driving. Neither of those two categories showed the clear increase which took place in directly-caused alcohol- and drug-related deaths. This is apparently because they deal only with alcohol, rather than with other drugs. There are no comparable categories for capturing deaths to which other drugs contributed or for "drug-related injury." As we saw in Table 1, most of the increase in the total of alcohol- and drug-related deaths is due to drugs other than alcohol.

Figure 2 shows that these three designations can overlap in any combination. The aggregate of all deaths with any of these designations is 10,768 deaths for Missouri residents during 1990-1998. That number represents 2.3 percent of total deaths during the decade so far, an average of nearly 1,200 deaths per year.

Even that total is an undercount. The alcohol-related injury checkbox is probably underused. Sometimes physicians choose to omit mention of alcohol or drug use because of the possible stigma involved. Fetal deaths due to maternal drinking or drug use are not included.

Furthermore, deaths represent only one part of the cost of addiction and abuse; other aspects include lost productivity, medical care, incarceration, and family disruption. In Missouri, the agency with primary responsibility for prevention and treatment of these problems is the Department of Mental Health's Division of Alcohol and Drug Abuse. Their regional offices (Columbia, Kansas City, St. Louis, Springfield, Poplar Bluff and Rolla) can refer callers to residential and outpatient treatment services as appropriate.⁷ Although they served over 46,000 Missourians in fiscal 1998, they estimate that as many as 342,000 Missourians may need substance abuse treatment.⁸

Notes:

- 1 "Smoking-Attributable Mortality in Missouri," *Missouri Monthly Vital Statistics*, Missouri Department of Health, State Center for Health Statistics, March 1998.
- 2 CDC/National Center for Health Statistics: "Monthly Vital Statistics Report," Vol.25, No. 11, Supplement 2, June 12, 1997, pp.74-75.
- 3 CDC/National Center for Health Statistics: "Deaths: Final Data for 1996," Vol. 47, No. 9, Nov. 10, 1998, p. 12, and same publication for earlier years.
- 4 Races other than black or white and unknown races together accounted for an average of fewer than four alcohol- or drug-related deaths per year 1990-1998. Because the numbers were so small, those deaths were not analyzed separately. However, they are included in all other totals.
- 5 Causes of death on death certificates were coded using the ninth revision of the International Classification of Diseases. To make the analysis manageable, some of the codes were combined into groups. On the other hand, some drugs of particular interest share a code with other similar drugs. Methamphetamine, for example, is grouped with other stimulants which include caffeine and some diet drugs. The groupings used in Table 1, then, are somewhat arbitrary.
- 6 John Carlton, "Heroin surpasses other drugs as Missouri's deadliest high," *St. Louis Post-Dispatch*, September 18, 1998, page 1.
- 7 Other sources of assistance include Alcoholics Anonymous and Narcotics Anonymous, which are listed in the white pages of telephone books, and various private treatment agencies.

While moderate use of alcohol appears to offer significant health benefits for some individuals, the National Institute for Alcohol Abuse and Alcoholism defines "moderate" drinking as no more than one drink a day for women and the elderly and two drinks per day for men ("Alcohol Alert" No 16 PH 315, April 1992).

⁸ Missouri Department of Mental Health, Missouri Division of Alcohol and Drug Abuse Fiscal Year 1998 Annual Report, pp.4 and 5.

<p>Table 1</p> <p>Deaths Directly Attributable to Alcohol and Other Drugs, by Drug Type:</p> <p>Missouri Residents 1990-1998</p>										
	1990	1991	1992	1993	1994	1995	1996	1997	1998	Change 1990-1998
Alcohol	344	299	306	283	362	339	353	363	360	+16
Cocaine, anesthetics	13	28	20	31	46	30	46	43	47	+34
Heroin, opiates	15	21	22	18	13	25	25	49	45	+30
Stimulants	0	0	0	0	5	4	2	11	9	+9
Other, mixed, unspecified	42	56	53	72	79	73	76	78	76	+34
Homicide, suicide	50	67	71	68	50	61	73	72	72	+22
Total alcohol &/or drug deaths	464	471	472	472	555	532	575	616	609	+145
Rate per 100,000 population	9.1	9.1	9.1	9.0	10.5	10.0	10.7	11.4	11.2	

Figure 1
Deaths Directly Attributable to Alcohol and Other Drugs, by Age Group :
Missouri Residents 1990-1998

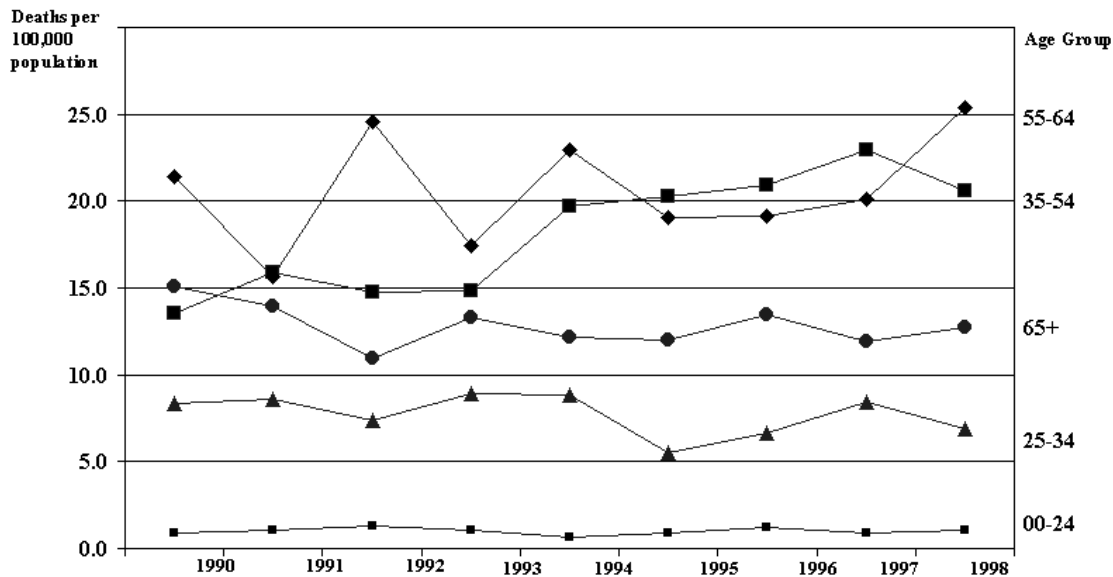
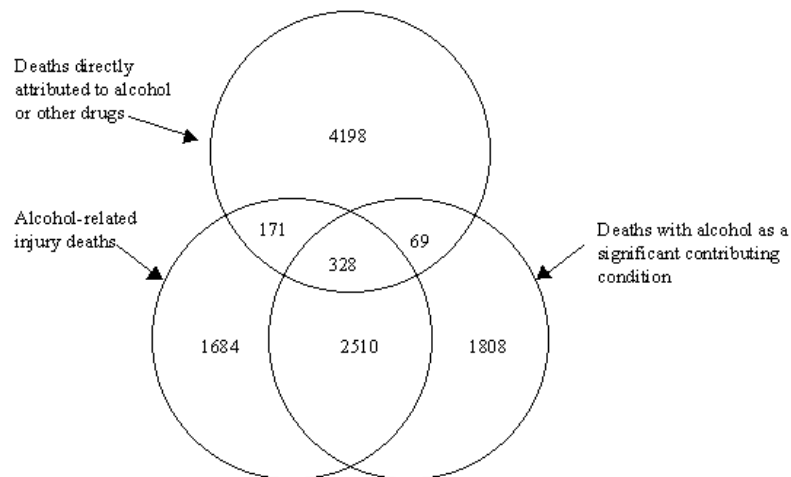


Figure 2
Designations of Alcohol or Drug Abuse on Death Certificates by Type: Missouri Residents 1990-1998



Provisional Vital Statistics for October 1999

Live births decreased in October as 6,372 Missouri babies were born compared with 6,728 one year earlier. However, cumulative births for the 10- and 12-month periods ending with October both show increases.

Deaths increased for all three time periods shown below. For January-October deaths increased by 2.7 percent from 44,545 in 1998 to 45,733 in 1999.

The **Natural increase** in October was 1,839 (6,372 births minus 4,533 deaths). The rate of natural increase in October was 3.9 per 1,000 population.

Marriages increased for all three time periods shown below. **Dissolutions of marriage** increased in October, but decreased for the cumulative 10- and 12-month periods ending with October. The marriage to divorce ratio for the 12 months ending with October increased from 1.73 in 1998 to 1.80 in 1999.

Infant deaths increased slightly in October, but decreased for the 10- and 12-month periods ending with October. For January-October the infant death rate decreased from 8.1 to 7.6 per 1,000 live births.

PROVISIONAL RESIDENT VITAL STATISTICS FOR THE STATE OF MISSOURI

October

Jan.- Oct. Cumulative

12 months ending with October

<u>Item</u>	<u>Number</u>		<u>Rate*</u>		<u>Number</u>		<u>Rate*</u>		<u>Number</u>			<u>Rate*</u>	
	<u>1998</u>	<u>1999</u>	<u>1998</u>	<u>1999</u>	<u>1998</u>	<u>1999</u>	<u>1998</u>	<u>1999</u>	<u>1998</u>	<u>1999</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>
Live Births	6,728	6,372	15.6	13.7	62,716	63,144	13.9	13.8	75,064	76,080	13.3	13.8	13.9
Deaths	4,430	4,533	10.3	9.7	44,545	45,733	9.9	10.0	53,733	54,567	10.1	9.9	10.0
Natural increase	2,298	1,839	5.3	3.9	18,171	17,411	4.0	3.8	21,331	21,513	3.2	3.9	3.9
Marriages	4,476	4,912	10.4	10.5	38,148	39,405	8.5	8.6	43,810	44,942	8.2	8.1	8.2
Dissolutions	1,981	2,116	4.6	4.5	21,010	20,686	4.7	4.5	25,275	24,981	4.7	4.7	4.6
Infant deaths	48	55	7.1	8.6	508	483	8.1	7.6	593	572	8.1	7.9	7.5
Population base (in thousands)	...	...	5,439	5,470	...	...	5,439	5,470	...	...	5,401	5,433	5,464

*Rates for live births, deaths, natural increase, marriages and dissolutions are computed on the number per 1,000 estimated population. The infant death rate is based on the number of infant deaths per 1,000 live births. Rates are adjusted to account for varying lengths of monthly reporting periods.

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